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(54) Title: MEMBRANE BASED ELECTROCHEMICAL CELL STACKS

(57) Abstract: The present invention provides membrane cassettes and stacks thereof which are suitable for a use in a variety of electrochemical applications. The invention further provides membrane cassettes which comprise one or more composite membrane electrode assemblies which have a peripheral gasket where the gasket has at least one groove or channel for introducing and distributing a sealant about the cassette. In certain preferred embodiments, the invention provides cassettes and stacks which are suitable for use in fuel cell applications.